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USING A PRIMITIVE type of spark transmitter, young German physicist, Heinrich Hertz, caused a small spark to leap across a very small gap between two ends of a large resonant loop of wire placed near the transmitter.

This scientific breakthrough, which contributed greatly to the advance of knowledge, occurred exactly a century ago in May 1887, and could be described as the birth of wireless communication.

Hertz had, in fact, proved a theoretical prediction made some 22 years earlier by Scottish physicist, James Clerk Maxwell, who, at Cambridge University, was first to suggest that electrical waves could travel through space.

In theory, such waves would have the frequency and wavelength of water waves or sound waves, but would travel at the speed of light.

British physicist, Sir Oliver Lodge, reflecting on the Hertz breakthrough, later wrote a book called *Talks About Wireless*, in 1925 and said: "Hertz showed how to produce them practically, and what was more, how to detect them at a distance, in an elementary and purely laboratory fashion.

"Further improvement in detecting appliances were soon devised by many people, and in due time, they were amenable to practical and commercial uses by the energy and enterprise of Senatore Marconi and his co-workers.

"To a public ignorant of the work of Clerk Maxwell and Hertz, this application (Marconi's) came as a great surprise and seemed very novel and mysterious.

To physicists it did not seem so — it was a natural application of what was known."

Hertz, in a book *Propagation of Electric Action with Finite Velocity Through Space*, published in 1893, mentions similar experimental work carried out by others at the same time as his successful 1887 experiment.

He said there was scarcely any doubt that Lodge would have also succeeded in observing waves in air and proving the propagation with time of electric force.

Judging by the writings of Lodge and Hertz, there was nothing but a cordial and frank appreciation among physicists of the day.

Hertz, Professor of Physics in the University of Bonn, died on January 1, 1894, in his 37th year.

Another young man, Marconi, read mention of Hertz's experiments in his obituary, which set him on his course to make a practical use of Hertzian Waves.

Marconi, based on the work of Hertz and a number of other early radio experimenters, conducted short range practical tests in 1896.

In 1897, he sent and received messages over a distance of about seven miles, and by 1898 had established two-way wireless communications across the English Channel.

In 1901, Marconi, at St John's Newfoundland, received the Morse code letter S transmitted to him by Professor Fleming (later to invent the thermionic valve) from Poldhu, Cornwall, England.

As the 20th Century was dawning, the era of wireless experimenters had begun. Hundreds of radio amateurs in Europe, America and Australia, were inspired by news of Marconi's trans-Atlantic communication.

Rudimentary transmitters and receivers were constructed during the next decade.

The Wireless Institute of Australia was founded in 1910, and by the outbreak of World War I, the amateur radio movement was firmly established in many parts of the world.

Many years later, in an effort to pay a lasting tribute to Hertz, his name was adopted internationally as the unit for a cycle per second — thus we have Hertz, kiloHertz, MegaHertz, and GigaHertz.

Let us modern-day radio amateurs and short-wave listeners think for a moment of Heinrich Hertz, in this the centenary of his birth of wireless experiment.



Yours truly
H. Hertz

CENTENARY OF HERTZ'S BIRTH OF WIRELESS